(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 431 080 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
15.06.2005 Bulletin 2005/24

(43) Date of publication A2:
23.06.2004 Bulletin 2004/26

(21) Application number: **03028482.2**

(22) Date of filing: **12.12.2003**

(51) Int Cl.[7]: **B60C 23/04**

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
AL LT LV MK

(30) Priority: **16.12.2002 JP 2002363703**

(71) Applicant: **Calsonic Kansei Corporation**
Tokyo 164-8602 (JP)

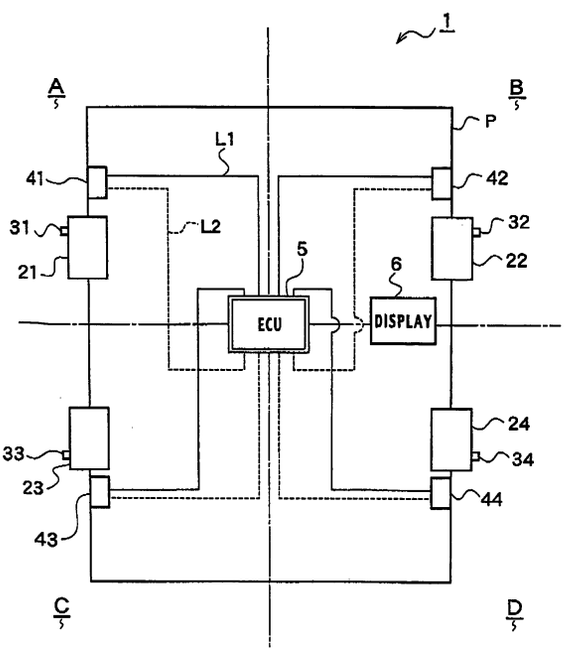
(72) Inventor: **Watanabe, Hiroshi**
Nakano-ku, Tokyo 164-8602 (JP)

(74) Representative: **Grünecker, Kinkeldey,**
Stockmair & Schwanhäusser Anwaltssozietät
Maximilianstrasse 58
80538 München (DE)

(54) Tire pressure detecting apparatus

(57) A tire pressure detecting apparatus detects the pressure and location of a tire in a vehicle and notifies a person in the vehicle of each tire pressure and the location of the tire linked with the tire pressure. Terminals (31, 32, 33, 34) are arranged on the tires (21, 22, 23, 24) of the vehicle, respectively. Receivers (41, 42, 43, 44) are arranged in the vicinities of the tires, to receive tire Pressure data signals transmitted from the terminals andmeasure reception levels of the received signals. An ECU (5) is connected to receive the tire pressure data and signal levels from the receivers. The ECU obtains only one piece of the tire pressure data having a maximum signal level from the receiver showing the maximum signal level and relates the obtained tire pressure data is of the tire with the maximum-sigaal-level receiver. A display (6) displays the pressure and location of each tire determined by the ECU.

FIG. 1



EP 1 431 080 A3

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 03 02 8482

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	DE 195 34 616 A1 (ALPHA-BETA ELECTRONICS AG, ELLIGHAUSEN, CH) 20 March 1997 (1997-03-20) * column 2 - column 6 * * claim 1 * * figure 1 *	1-4	B60C23/04
X	US 6 018 993 A (NORMANN ET AL) 1 February 2000 (2000-02-01) * claim 2 * * figure 2 *	1	
X	US 6 034 597 A (NORMANN ET AL) 7 March 2000 (2000-03-07) * claim 1 * * figures 1,2 *	1	
X	US 6 194 999 B1 (UHL G&UUML ET AL) 27 February 2001 (2001-02-27) * column 3 - column 4 * * figures 1,5 *	1-4	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
X	EP 1 219 472 A (PACIFIC INDUSTRIAL CO., LTD) 3 July 2002 (2002-07-03) * the whole document *	1-4	B60C
P,X	WO 03/089260 A (SCHRADER BRIDGEPORT INTERNATIONAL, INC) 30 October 2003 (2003-10-30) * page 37 - page 38 * * figures 1,13,14 *	1,4	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	27 April 2005	Billen, K

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 02 8482

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

27-04-2005

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 19534616 A1	20-03-1997	AT 202978 T	15-07-2001
		CA 2185771 A1	19-03-1997
		DE 59607259 D1	16-08-2001
		EP 0763437 A1	19-03-1997
		ES 2161318 T3	01-12-2001
		US 6112585 A	05-09-2000
US 6018993 A	01-02-2000	DE 19608478 A1	22-05-1997
		DE 19608479 A1	22-05-1997
		DE 59602902 D1	30-09-1999
		DE 59604910 D1	11-05-2000
		WO 9718961 A1	29-05-1997
		WO 9718962 A1	29-05-1997
		EP 0861159 A1	02-09-1998
		EP 0861160 A1	02-09-1998
		ES 2138383 T3	01-01-2000
		ES 2145497 T3	01-07-2000
		US 6181241 B1	30-01-2001
US 6034597 A	07-03-2000	DE 19631783 A1	12-03-1998
		CA 2273175 A1	12-02-1998
		DE 59703963 D1	09-08-2001
		WO 9805518 A1	12-02-1998
		EP 0915764 A1	19-05-1999
		ES 2160359 T3	01-11-2001
US 6194999 B1	27-02-2001	DE 19518806 A1	28-11-1996
		DE 59600605 D1	29-10-1998
		WO 9637374 A1	28-11-1996
		EP 0828621 A1	18-03-1998
		ES 2125108 T3	16-02-1999
EP 1219472 A	03-07-2002	JP 2002257661 A	11-09-2002
		DE 60109404 D1	21-04-2005
		EP 1219472 A2	03-07-2002
		TW 567154 B	21-12-2003
		US 2002078740 A1	27-06-2002
WO 03089260 A	30-10-2003	US 2003197603 A1	23-10-2003
		AU 2003228539 A1	03-11-2003
		EP 1494877 A1	12-01-2005
		WO 03089260 A1	30-10-2003

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82